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CLAIM 8. A device for the advancement of bars in automatic loaders associated with a bar loading system, the advancement device having a mechanism for the individual release of the bars and a bar pusher for pushing a bar into a spindle of an automatic lathe, the bar pusher being adapted to connect with a collet which is adapted to receive the rear end of a released bar, the device further comprising:

a first guide;

a carriage operatively associated with said guide, said carriage having grip elements for a bar to be advanced, said carriage being slidably actuated between an initial position, where said grip elements are actuated so as to grip the bar deposited on said guide and a final position, where said bar is released by said grip elements after inserting the bar in the collet and into the spindle of an automatic lathe;

said bar pusher being supported for translatory movement; and

said bar pusher being actuatable and lockable between an offset position and a position where said bar pusher is aligned with the bar deposited on said first guide when said carriage is in the final position.

CLAIM 9. The device of claim 8 wherein:

said first guide includes a plurality of supporting elements.

CLAIM 10. The device of claim 8 including:

a plate articulated on said carriage and adapted to oscillate between a position for abutment on said bar and an inactive position; and

a sensor mounted on said plate and adapted to detect the abutment of said plate against one end of said bar and to activate said grip elements to grip said bar.

CLAIM 11. The device of claim 10 wherein:

said plate is retained in said abutment position by a lever which is articulated on said carriage and is controlled by a cam, said cam being adapted to articulate said lever from a position for retaining said plate in said abutment position into a position where said plate can assume said inactive position.

CLAIM 12. The device of claim 8, wherein:

said grip elements comprise V-shaped blade elements which are actuated in mutual contrast to grip the released bar interposed therebetween them.

CLAIM 13. The device of claim 12, wherein:

said blade elements are fixed on two respective posts which are parallel and slidingly supported in said carriage and have racks which mesh with a pinion, with which a lever is radially rigidly coupled.

CLAIM 14. The device of claim 13 including:

a fluid actuated jack mounted on said carriage acting on said lever.

CLAIM 15. The device of claim 9, wherein:

said supporting elements comprise brackets having supports for said released bar, said brackets being connected by tie rods slideable therein to allow the brackets to stack up on the side towards which said carriage advances.

CLAIM 16. The device of claim 10, wherein:

said bar pusher is connected to a flexible traction element slidable in a second guide, said bar pusher being lockable and slidable from said offset position to an aligned position for pushing on said bar when said carriage is in said final position and said plate is in said inactive position.

CLAIM 17. The device of claim 16, wherein:

said second guide is rotatably supported and said bar pusher is connected to said flexible traction element using a flap which is guided through a slot of said second guide.

CLAIM 18. The device of claim 17 wherein:

said second guide is actuated by a fluid-actuated jack between said offset and aligned positions of said bar pusher with respect to said bar.

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CLAIM 19. In a device for the advancement of bars in automatic loaders associated with a bar loading system, the advancement device having a mechanism for the individual release of the bars and a bar pusher for pushing a bar into a spindle of an automatic lathe, the bar pusher being adapted to connect with a collet which is adapted to receive the rear end of a released bar, the improvement comprising:

a carriage having grip elements for a bar to be advanced, said carriage being slidably actuated between an initial position, where said grip elements are actuated so as to grip the bar deposited thereon and a final position, where said bar is released by said grip elements after inserting the bar in the collet and into the spindle of an automatic lathe, said bar pusher being supported for translatory movement and said bar pusher being aligned with the deposited bar when said carriage is in the final position.

CLAIM 20. The device of claim 19 wherein:

a plate articulated on said carriage and adapted to oscillate between a position for abutment on said bar and an inactive position; and

a sensor mounted on said plate and adapted to detect the abutment of said plate against one end of said bar and to activate said grip elements to grip said bar.

CLAIM 21. The device of claim 20 wherein:

said plate is retained in said abutment position by a lever which is articulated on said carriage and is controlled by a cam, said cam being adapted to articulate said lever from a position for retaining said plate in said abutment position into a position where said plate can assume said inactive position.

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CLAIM 22. The device of claim 19, wherein:

said grip elements comprise V-shaped blade elements which are actuated in mutual contrast to grip the released bar interposed therebetween them.

CLAIM 23. The device of claim 22, wherein:

said blade elements are fixed on two respective posts which are parallel and slidingly supported in said carriage and have racks which mesh with a pinion, with which a lever is radially rigidly coupled.

CLAIM 24. The device of claim 23, wherein:

a fluid actuated jack mounted on said carriage acting on said lever.

CLAIM 25. The device of claim 19 including:

a guide operatively associated with said carriage, said guide supporting a bar when such bar is advanced into a collet.

CLAIM 26. The device of claim 25 wherein:

said guide includes a plurality of supporting elements.

CLAIM 27. In a device for the advancement of bars in automatic loaders associated with a bar loading system, the advancement device having a mechanism for the individual release of the

bars and a bar pusher for pushing a bar into a spindle of an automatic lathe, the bar pusher being adapted to connect with a collet which is adapted to receive the rear end of a released bar, the improvement comprising:

a carriage having grip elements for a bar to be advanced, said carriage being slidable so as to advance the bar end into a collet; and

said bar pusher being aligned with the deposited bar when said carriage is in the final position.

CLAIM 28. The device of claim 27 including:

a guide operatively associated with said carriage, said guide supporting a bar when such bar is advanced into a collet.

CLAIM 29. The device of claim 28 wherein:

said guide includes a plurality of supporting elements.

CLAIM 30. The device of claim 27 including:

a plate articulated on said carriage and adapted to oscillate between a position for abutment on said bar and an inactive position; and

a sensor mounted on said plate and adapted to detect the abutment of said plate against one end of said bar and to activate said grip elements to grip said bar.

CLAIM 31. The device of claim 30 wherein:

said plate is retained in said abutment position by a lever which is articulated on said carriage and is controlled by a cam, said cam being adapted to articulate said lever from a position for retaining said plate in said abutment position into a position where said plate can assume said inactive position.

CLAIM 32. The device of claim 27, wherein:

said grip elements comprise V-shaped blade elements which are actuated in mutual contrast to grip the released bar interposed therebetween them.

CLAIM 33. The device of claim 32, wherein:

said blade elements are fixed on two respective posts which are parallel and slidingly supported in said carriage and have racks which mesh with a pinion, with which a lever is radially rigidly coupled.

CLAIM 34. The device of claim 33 including:

a fluid actuated jack mounted on said carriage acting on said lever.